1044-106 Is Continuous ST Monitoring a Better Predictor Outcome Than Enrolling Electrocardiogram in Acute Myocardial Infarction?

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The GUSTO-I trial showed that certain enrollment variables predict 30-day mortality after MI. Peak lead ST elevation (STPK) on enrollment ECG was not predictive, though this is the variable that drives treatment. We theorized that the peak was not obtained on the static enrollment ECG, with loss of predictive information. We evaluated peak ST elevation on enrollment ECG vs peak ST elevation in the primary lead during continuous (CONT) 12-lead ST monitoring in the GUSTO-I and TAMI-9 acute MI substudies, using patients as their own controls (N = 492). Endpoints were combined death or new CHF, or no death or CHF at 30 days. No significant differences in age, sex, prior MI, hypertension, smoking, diabetes, peak CK, time to treatment (TTT) or ejection fraction (EF) were seen. Results were:

Death		Peak TTT			Lytics to Enrollment			CONT
CHF	N	CK	hrs	EF	STPK[a]	STPK[b]	STPK[c]	STPK[d]
Yes	140	2200	2.8	60	(0–63)	40.0	325 μV	525 μV
No	352	1233	2.7	55	(0–29)	35.8	300 μV	438 μV

[a]Range (min), [b]percent PK on enroll ECG, [c]p = 0.159, [d]p = 0.0048

Conclusions: Enrollment ECG failed to identify true peak ST in 60% of AMI pts. There was a trend for later peaks in pts. with poor outcome. Peaks were identified within the first 6 hours in 95% of pts. Thus, true ST peak is predictive of outcome when continuous 12-lead ST monitoring is used.

1044-107 Posterior Chest Leads (V_{7-9}) ST↑ During Acute Inferior Infarct Predicts Larger Infarct and Better Benefit From Thrombolysis

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Since the beneficial effect of thrombolysis is proportional to the amount of jeopardized myocardium, patients (pts) with inferior myocardial infarct (IMI) and posterior involvement may receive greater benefit from thrombolysis than other IMI pts. However, the early identification of these pts is hampered by the absence of ST↑ reflecting posterior MI on standard EGG. To determine the value of ST↑ in posterior chest leads (V_{7-9}), to facilitate the diagnosis of posterior involvement, and to evaluate the effect of thrombolytic therapy in this subgroup of IMI pts, we studied 87 pts with first IMI, treated with rt-PA. Pts were divided into 2 groups: 46 (53%) with ST↑ in V_{7-9} (Group A) and 41 (47%) without (Group B). Group A had more frequent posterolateral wall motion abnormalities on adission radionuclide ventriculography (87% vs 46% $p < 0.001$), higher peak CK (1254 ± 673 vs 847 ± 723, $p < 0.05$) and lower LVEF (53 ± 14 vs 60 ± 9, $p < 0.008$), than Group B. To determine the beneficial effect of thrombolysis, pts were stratified according to the patency of the infarct artery on angiography. While in Group A patency resulted in better LVEF (56 ± 13 vs 44 ± 12, $p < 0.012$), in Group B the EF was preserved regardless of patency. *In conclusion:* 1) ST↑ in V_{7-9} identifies IMI pts with posterior involvement. 2) IMI pts with ST↑ in V_{7-9} benefit more from thrombolysis, as compared to those without.

1044-108 ST-segment Elevation in Leads I and aVL in Acute Anteroseptal Myocardial Infarction is an Independent Risk Factor for Left Ventricular Rupture

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Background: It is difficult to determine which patients have a risk of cardiac rupture after acute myocardial infarction. *Objectives:* The purpose of this study is to determine the usefulness of electrocardiography (ECG) in the emergency room for assessment of the risk of cardiac rupture after acute anteroseptal myocardial infarction (AS-MI). *Methods:* The presence of ST-segment elevations on emergent 12-lead ECGs in 364 consecutive AS-MI patients was evaluated. Patients with complete bundle branch block were excluded. A forward-stepwise logistic regression analysis for cardiac rupture was performed with covariants of age, gender, and ST-segment elevations in leads I, aVL, and V1–V6. *Results:* Cardiac ruptures were observed in 16 patients, 7 with left ventricular free-wall rupture (FWR) and 9 with ventricular septal perforation (VSP). For FWR, ST-elevation in lead aVL was the only independent factor (odds ratio = 5.4, 95% C.I. = 1.6–18.7, P = 0.0078). For VSP, female gender (odds ratio = 7.7, 95% C.I. = 1.8–33.1, P = 0.0064) and ST-elevation in lead I (odds ratio = 6.4, 95% C.I. = 1.5–27.5, P = 0.0134) were independent factors. For left ventricular cardiac rupture, female gender (odds ratio = 4.2, 95% C.I = 1.4–12.9, P = 0.0116) and ST-elevation in lead aVL (odds ratio = 3.5, 95% C.I = 1.8–6.7, P = 0.0002) were both independent factors. *Conclusion:* In pts with acute AS-MI, the ST-segment elevation in leads I and aVL is an independent risk factor for left ventricular rupture.

1044-109 Occurrence of Ventricular Fibrillation During Acute Myocardial Infarction: Prediction by Dynamic Continuous 12 Lead ECG ST-Segment Variables

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The objective of this study was to assess whether continuous 12 lead ECG ST-segment changes during the first 3 hours of recording could predict or affect the occurrence of ventricular fibrillation (VFib) during acute myocardial infarction (MI) treated with thrombolytic agents. 533 patients undergoing continuous 12 lead ECG ST segment monitoring were included in the study. The variables analyzed included: 1) the time to steady state of the ST (Time SS); 2) number of ST transition episodes; 3) the peak of the ST deviation (ST peak); 4) and the ST curve area (ST area). To evaluate the effects of different ST segment transition patterns, patients were divided as follows: 1) those with 1 ST transition; 2) those with 2 ST transitions; 3) those with ≥ 3 ST transitions (cyclic flow). Both patients with and without VFib were equally distributed in the three groups (p = NS). The remaining ST variables in the VFib and no VFib groups are shown. Values are reported as percentages of median (25th, 75th) percentiles.

	ST Peak	ST Area	Time SS
VFib = Yes	738	9197	180
Vfib = No	498	4977	124
p Value	0.0001	0.0003	0.19

In conclusion: (1) ST-segment variables looking at the area of myocardium infarcted and at risk, predict VFib in MI treated with thrombolytic therapy; (2) frequent episodes of ST segment transition are not associated with either a higher or lower occurrence of Vfib.

1045 Cardiac Pacing/Rate Adaptive Pacing

Wednesday, March 19, 1997, 9:00 a.m.–11:00 a.m.
Anaheim Convention Center, Hall E
Presentation Hour: 9:00 a.m.–10:00 a.m.

1045-110 Permanent Biventricular Pacing by a Transvenous Approach

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The benefit of chronic DDD pacing (DDD-P) to treat end-stage congestive heart failure (CHF) remains controversial. But compared with single right ventricular (RV) DDD-P, biventricular synchronous pacing (BVSP) was recently shown as capable to improve symptoms dans hemodynamics in patients with dilated cardiomyopathy (DCM) and drug-refractory CHF. In the preliminary reports, the left ventricle (LV) was paced epicardially. The aim of the present study was to examined the possibility of performing permanent BVSP with a totally transvenous lead configuration.

In 24 pts, mean age 68, a very thin unipolar ventricular lead or a specifically designed coronay sinus (CS) lead was introduced into the CS to catheterize selectively a cardiac vein over the LV free wall. The tip electrode was introduced as distally as possible up to a blocked position. The procedure was successful in 17 pts (72%) with a final placement in the great cardiac veine (n = 3), ini a lateral vein (n = 6), in a posterolateral vein (n = 7) and at the LV apex through the mid-cardiac vein (n = 1). The mean acute pacing threshold was 1.2 ± 0.8 V and the average intracardiac signal amplitude was 15 ± 5 mV. The RV lead was placed at the apex or in the outflow tract. The 2 ventricular leads were connected through a Y adaptator to a dual-chamber (biventricular) pacemaker (PM) in 3 pts, to a "triple-chamber" PM in 10 pts and to a "four-chamber" PM in 4 pts.

After a mean follow-up of 7 months (2–18), 16 of 17 transvenous LV leads were functional whith a mean chronic pacing threshold of 2.1 ± 1 V and an average intracardiac signal amplitude of 17 ± mV. SBVP was effective and permanent in these 16 pts.

With the currently available lead technology, permanent transvenous LV